Cumulative Review
Grade 8

1. Work out the value of $\frac{11+4\times7}{3}$.

Answer ..... [1]

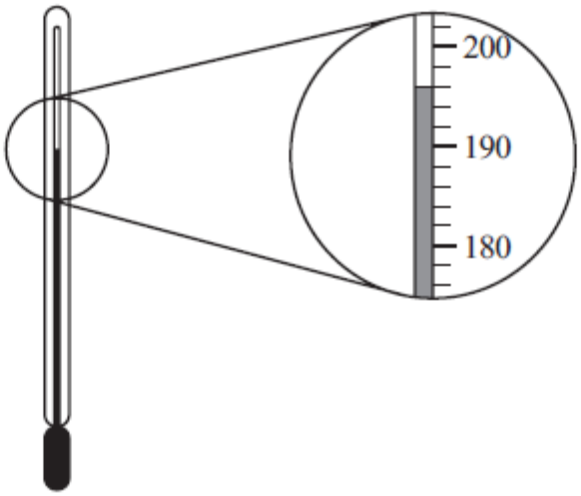
2. A train leaves Paris at 10 56 and arrives in Marseille at 13 12.

How long does the journey take?

Give your answer in hours and minutes.

Answer ..... h ..... min [1]

3.



The diagram above shows part of a thermometer which measures the temperature in °C inside an oven.

What is the temperature in the oven?

Answer ..... °C [1]

4. When Jon opened a packet containing 30 biscuits, he found that 3 biscuits were broken.

What percentage of the biscuits were broken?

Answer ..... % [1]

5. Write the following in order, starting with the smallest.

$$0.35 \qquad 33\% \qquad \frac{1}{3}$$

Answer ..... < ..... < ..... [1]

6. Alphonse, his wife and child fly from Madrid to the Olympic Games in Beijing.
The adult plane fare is 450 euros.
The child fare is 68% of the adult fare.

(a) Show that the total plane fare for the family is 1206 euros. Show all your working clearly.

Answer (a)

[3]

(b) The ratio of the money spent on plane fares : accommodation : tickets = 6 : 5 : 3.

Calculate the **total** cost.

Answer(b) ..... euros [3]

(c) Alphonse changes 500 euros into Chinese Yuan at a rate of 1 euro = 9.91 Chinese Yuan.

How many Chinese Yuan does he receive?

Answer(c) ..... Yuan [2]

(d) Their plane leaves Madrid at 05 45. The journey takes 11 hours 35 minutes.
Beijing time is 6 hours ahead of Madrid time.

Find the time in Beijing when they arrive.

Answer(d) ..... [2]

7. In May, the average temperature in Kiev was 12°C.

In February, the average temperature was 26°C lower than in May.

What was the average temperature in February?

Answer ..... °C [1]

8. 

For the diagram above, write down

(a) the number of lines of symmetry,

Answer(a) ..... [1]

(b) the order of rotational symmetry.

Answer(b) ..... [1]

9. Rehana pays $284 in tax.
This is $\frac{2}{9}$ of the money she earns.
How much does Rehana earn?

Answer $ ..... [2]

10. A packet of sweets costs $2.45.

Felipe and his brother share the cost in the ratio 4 : 3.

How much does Felipe pay?

Answer $ ..... [2]

11.

Find the circumference of a circle of radius 5.7 cm.
Write down your answer

(a) exactly as it appears on your calculator,

Answer(a) ..... cm [1]

(b) correct to the nearest centimetre.

Answer(b) ..... cm [1]

12.

A shop sells batteries at 68 cents each, or $2.15 for a pack of four.
How much will Daniel save if he buys two packs of four instead of 8 single batteries?

Answer $ ..... [2]

13.

Factorise completely $6x - 9x^2y$.

Answer ..... [2]

14.

(a) When $x = -3$ and $y = 4$, find the value of

(i) x^3,

Answer(a)(i) ..... [1]

(ii) xy^2.

Answer(a)(ii) ..... [1]

(b) Simplify $\frac{z^{-1}}{z^{-2}}$.

Answer(b) ..... [1]

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15. $\sqrt{4}$ $\sqrt{14}$ $\sqrt{36}$ $\sqrt{64}$ $\sqrt{81}$ $\sqrt{100}$

From the list above, write down

(a) a prime number,

Answer(a) ..... [1]

(b) a factor of 27,

Answer(b) ..... [1]

(c) a multiple of 4,

Answer(c) ..... [1]

(d) an irrational number.

Answer(d) ..... [1]

16. **(a)** Solve the equations

(i) $3x - 4 = 14$,

Answer(a)(i) $x =$ ..... [2]

(ii) $\frac{y+1}{5} = 2$,

Answer(a)(ii) $y =$ ..... [2]

(iii) $3(2z - 7) - 2(z - 3) = -9$.

Answer(a)(iii) $z =$ ..... [3]

17.

Diagram 1

Diagram 2

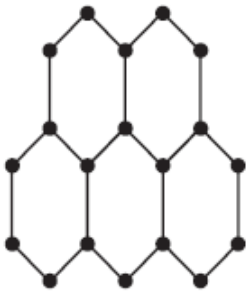


Diagram 3

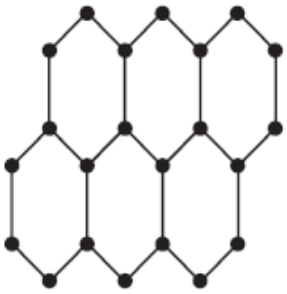


Diagram 4

Look at the sequence of diagrams above.
The number of dots in each diagram is given in the table below.

Diagram number	1	2	3	4	
Number of dots	13	16	19	22	

Find the number of dots in

(a) Diagram 5,

Answer(a) ..... [1]

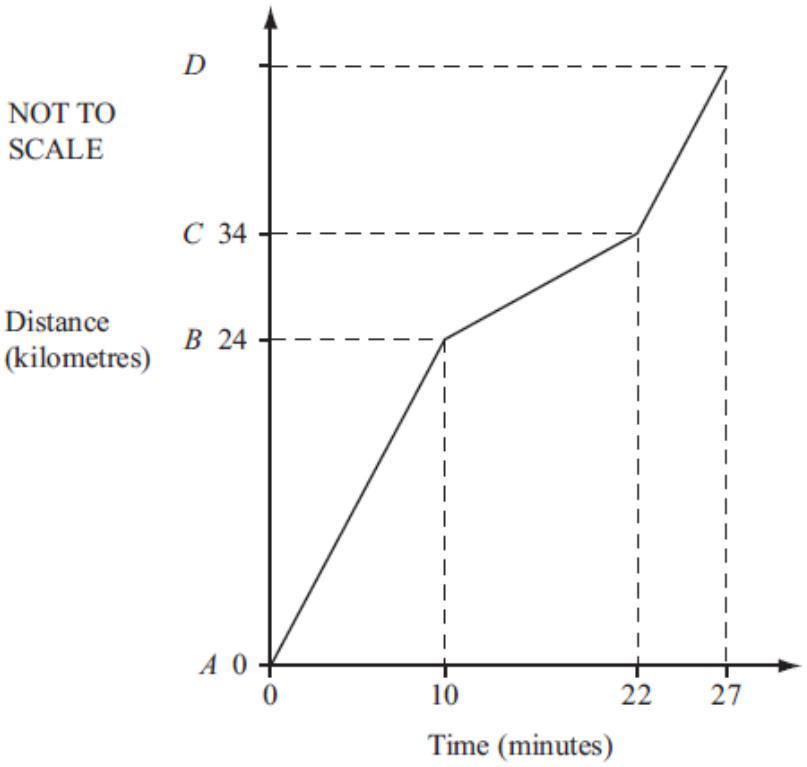
(b) Diagram 11,

Answer(b) ..... [1]

(c) Diagram n.

Answer(c) ..... [2]

18.



The diagram shows the graph of Rachel's journey on a motorway.
Starting at *A*, she drove 24 kilometres to *B* at a constant speed.
Between *B* and *C* she had to drive slowly through road works.
At *C* she drove a further distance to *D* at her original speed.

(a) For how many minutes was she driving through the road works?

Answer(a) ..... min [1]

(b) At what speed did she drive through the road works?
Give your answer in

(i) kilometres / minute,

Answer(b)(i) ..... km/min [1]

(ii) kilometres / hour.

Answer(b)(ii) ..... km/h [1]

(c) What is the total distance from *A* to *D*?

Answer(c) ..... km [2]

19. Nicolas needs to borrow $4000 for 3 years. The bank offers him a choice:

Offer A	Offer B
Interest Rate 8.5% per year Pay the interest at the end of each year	Interest Rate 8% per year Pay all the interest at the end of three years

Nicolas recognises that offer A is simple interest and offer B is compound interest.

(a) If he takes offer A, what is the total amount of interest he will pay?

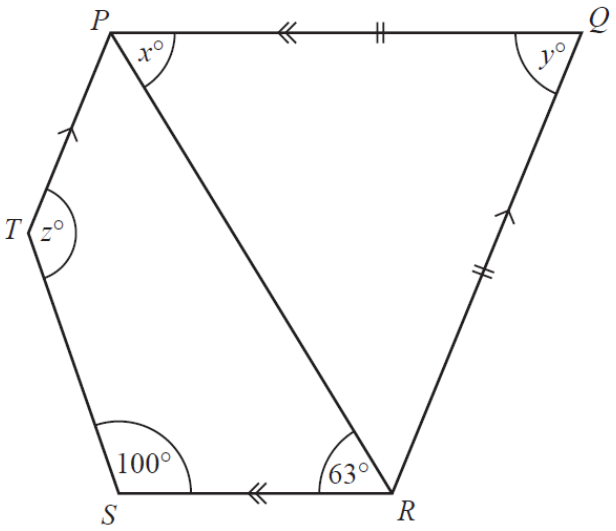
Answer(a) $ ..... [2]

(b) If he takes offer B, how much **interest** will he pay?
Give your answer correct to 2 decimal places.

Answer(b) $ ..... [3]

20.

NOT TO SCALE



(a) In the diagram PQ is parallel to SR, and QR is parallel to PT.
$PQ = QR$, angle $PRS = 63°$ and angle $RST = 100°$.

Find the value of

(i) x,

Answer(a)(i) $x =$ ..... [1]

(ii) y,

Answer(a)(ii) $y =$ ..... [2]

(iii) z.

Answer(a)(iii) $z =$ ..... [2]

(b) The shape of a flower bed is a regular octagon, $ABCDEFGH$, with sides of 4 metres.

(i) Show that the interior angle of a regular octagon is 135°.

Answer(b)(i)

[2]